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10/001,957	12/05/2001	Tadao Matsumoto	0229-0678P	1375

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EXAMINER

MAKI, STEVEN D

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 09/05/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/001,957

Applicant(s)

MATSUMOTO, TADAO

Examiner

Steven D. Maki

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 1733

- 1) Claims 1-6 are objected to because of the following informalities:

In claim 1 line 2, "prov ided" should be --provided--.

In claim 2 line 4, "." should be --,--.

In claim 3 line 2, "rage" should be --range--.

In claim 5 line 1, "acco rding" should be --according--.

Appropriate correction is required.

- 2) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 3) Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5 lines 5-6, the description of "on the other side than the tire equator side of the longitudinal groove" is confusing and ambiguous. In claim 5 lines 5-6, it is suggested to change "on the other side than the tire equator side of the longitudinal groove" to --on an axially outer side of the longitudinal groove--.

- 4) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 5) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1733

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Kajikawa et al

6) Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Kajikawa et al (US 5031680).

Kajikawa et al discloses a pneumatic tire having blocks defined by longitudinal and transverse grooves. Each block adjacent to one side of the longitudinal groove has side grooves 7 wherein the depth gW of the side groove is 5-50% block width, the length gL of the side groove is 5-25% of block length and the height gH of the side groove is 15-80% of main groove depth. The side groove 7 may be a V-shaped side groove as shown in figure 6.

As to claim 1, the claimed cut-slope reads on the V-shaped side groove. As shown in figure 6, the V-shaped side groove ("cut-slope") is "on a corner between the top surface and a lateral face of the block". As shown in figure 6, the V-shaped side groove ("cut slope") inclines toward the bottom of the longitudinal groove. As shown in figure 6, the depth gW ("axial width") of the side groove ("cut-slope") decreases from a middle point of the side groove ("cut-slope") towards each side thereof in the circumferential direction.

As to claim 5, Kajikawa et al shows straight longitudinal grooves on both sides of the tire equator and blocks on each side of the blocks.

7) Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kajikawa et al (US 5031680).

Art Unit: 1733

As to claim 2, it would have been obvious to one of ordinary skill in the art to incline the V-shaped side groove (cut-slope) so as to define an inclination angle of 40-70 degrees since Kajikawa et al teaches the depth gW of the side groove is 5-50% block width and the height gH of the side groove is 15-80% of main groove depth (when gW and gH have the same value (e.g. 30%), the angle is 45 degrees and when the end points of 50% and 80% for gW and gH respectively are used, the angle is about 58 degrees). Furthermore, the limitation of the maximum axial width of the cut slope being 20-40% of groove bottom width would have been obvious and could have been determined without undue experimentation since (a) Kajikawa et al suggests providing the longitudinal groove with a width such that the total of groove widths G1W is 20-35% times tread width TW to enhance straight forward traveling property and draining performance and (b) the depth gW (axial width) of the side groove (cut-slope) is 5-50% of block width for improving traction and driving performance on snow and ice.

8) Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajikawa et al (US 5031680) in view of Europe '929 (EP 475929).

As to claim 4, it would have been obvious to one of ordinary skill in the art to add a blind sipe axially extending from the side groove and terminating in the block since (1) Kajikawa et al suggests adding sipes to the blocks which have blind side grooves (a type of notch) to improve performance on snow and ice, (2) Europe '929 suggests extending a sipe from a blind groove in a block and optionally (3) it is taken as well known / conventional in the tire art to use blind sipes in blocks in order to improve

Art Unit: 1733

performance on ice / snow. In claim 4, "axial groove" reads on --axial sipe-- (a sipe is narrow groove).

As to claim 6, it would have been obvious to provide Kajikawa et al's shoulder blocks with a length greater than width and to provide the blocks on the other side of the longitudinal groove with a width greater than length since Europe '929 suggests increasing the number of blocks toward the equatorial plane as shown for example in figures 1 and 2 to decrease noise. In figure 2 of Europe '929, the ground contacting area of each shoulder block has a length greater than axial width and each intermediate block row has an axial width greater than length. The use of different size blocks in Kajikawa et al's tread to reduce noise per the teachings of Europe '929 is consistent with Kajikawa et al's desire to improve noise generation (col. 1 lines 7-12).

Japan '006

9) Claims 1, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan '006 (JP 3-271006) in view of Kajikawa et al (US 5031680).

Japan '006, directed to preventing partial abrasion and pattern noise, discloses a pneumatic tire having blocks defined by longitudinal grooves and transverse grooves. Each shoulder block is provided with a notched portion having a length of 20-70% of the length of the block. The notch comprises a sloped surface 12A'. Japan '006's range of 20-70% overlaps the claimed range of 50-80% set forth in claim 3. Japan '006 does not recite shaping the notch such that the axial width of the notch (cut-slope) gradually decreases from a middle point of the notch (cut-slope) towards each side thereof in the circumferential direction.

Art Unit: 1733

As to claims 1 and 3, it would have been an obvious alternative to one of ordinary skill in the art to shape Japan '006's notch as a V-shaped notch instead of a rectangular notch (the axial width of the notch (cut-slope) thereby gradually decreasing from a middle point of the notch (cut-slope) towards each side thereof in the circumferential direction) since Kajikawa et al, which also notches a side of a block, teaches that various shapes may be used for a side groove (notch) in a block of a tire tread and (b) Kajikawa et al expressly shows a V-shaped notch (figure 6) as being an alternative to a rectangular notch. The limitation of the claimed cut slope length being 50-80% of the block length would have been obvious in view of Japan '006's teaching that each shoulder block is provided with a notched portion having a length of 20-70% of the length of the block (Japan '006's range of 20-70% overlapping the claimed range of 50-80% set forth in claim 3).

As to claim 5, the outer longitudinal groove 1 of Japan '006 is straight.

Allowable Subject Matter

10) **Claim 3 would be allowable if (1) rewritten in independent form including all of the limitations of the base claim and any intervening claims and (2) amended to additionally include the subject matter of --wherein in a tire meridian section, the cut slope has an inclination angle of from 40 to 70 degrees with respect to the normal direction to the tread surface--.**

If applicant adopts the above proposal, then dependent claims 2, 4, 5 and 6 would be allowable if (1) claims 2, 4, 5 and 6 are made dependent on proposed claim 3 (in claims 2, 4 and 5, change "claim 1" to --claim 3-- and (2) in claim 2,

Art Unit: 1733

-- in a tire meridian section, the cut slope has an inclination angle of from 40 to 70 degrees with respect to the normal direction to the tread surface-- is deleted as being redundant to proposed claim 3.

Also, the above noted claim objections for claims 3 and 5 and 112 second paragraph rejection of claim 5 must be overcome (e.g. by adopting the suggestions set forth in paragraphs 1 and 3 of this office action).

With respect to Kajikawa et al, Kajikawa et al teaches a "cut-slope" circumferential length of 5-25% of the length of the block (of the circumferential length of the corner of the block) instead of 50-80% the circumferential length of the corner of the block as set forth in claim 3.

With respect to Japan '006, there is no motivation to further modify Japan '006 such that the notch is inclined at an inclination angle of from 40 to 70 degrees with respect to the normal direction to the tread surface; it being emphasized that the (1) Japan '006 teaches inclining the surface of the notch at a smaller angle with respect to the normal than the angle α of the remaining block sidewall, (2) on page 34 bottom right corner, Japan '006 describes an example wherein α is 35 degrees, and (3) figure 2a illustrates the angle of the surface of the notch (surface 12A') of about 5 degrees instead of 40-70 degrees.

Remarks

11) The remaining references are of interest.


Art Unit: 1733

12) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is 703-308-2068. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Steven D. Maki
September 2, 2003


STEVEN D. MAKI 9-2-03
PRIMARY EXAMINER
~~GROUP 1300~~
Av 1733